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EXAMINER	
TANINGCO, MARCUS H	

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MAU-SONG CHOU,
LARRY YUJIRI, and
DAVID P. DIXON

Appeal 2009-002800
Application 10/663,310
Technology Center 2800

Decided: September 23, 2009

Before CATHERINE Q. TIMM, ROMULO H. DELMENDO, and JEFFREY T. SMITH, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision finally rejecting claims 1-65 (Final Office Action, mailed

November 4, 2005), the only claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).[1]

We AFFIRM.

STATEMENT OF THE CASE

Claim 1 is illustrative of the subject matter on appeal, and is reproduced from the Claims Appendix to the Appeal Brief ("App. Br."):

> 1. A system for detecting and analyzing chemical and biological materials and a sample, said system comprising:
>
> a spectrometer device responsive to passive emissions from the sample, said emissions being in the tetra hertz frequency band, said spectrometer device having a field-of-view and generating an emission spectrum of molecular constituents in the sample; and
>
> a cold surface positioned in the field-of-view of the spectrometer device, said cold surface providing a cold background relative to the temperature of the sample.

The Examiner relies on the following evidence to establish unpatentability (Examiner's Answer ("Ans."), mailed November 30, 2006):

Luukanen	US 6,242,740 B1	Jun. 5, 2001
Chou	US 6,531,701 B2	Mar. 11, 2003
Laufer	US 6,853,452 B1	Feb. 8, 2005
Butler	US 6, 885,965 B2	Apr. 26, 2005
Arnone	US 2004/01155665A1	Aug. 12, 2004

Appellants request review of the following ground of rejection (App. Br. 5): claims 1-3, 5, 12-25, 45-51, and 58-65 under 35 U.S.C. § 103(a) as unpatentable over the combined teachings of Luukanen and Laufer or Chou

[1] In Rendering this decision we have considered Appellants' Brief dated September 6, 2006, and the Reply Brief dated August 7, 2008.

or Butler; and claims 4, 6-11, 26-44, and 52-57 under 35 U.S.C. § 103(a) as unpatentable over the combined teachings of Luukanen and Laufer or Chou further in view of Arnone.

Appellants have not presented separate arguments for any claim on appeal. (See App. Br. generally). Thus, in deciding this appeal we will limit our discussion to independent claim 1.

ISSUES

The following issues are presented for our review:

1. Have Appellants shown reversible error in the Examiner's determination that Luukanen's system can be used in sub-millimeter range spectroscopy?

We answer this question in the negative

FINDINGS OF FACT ("FF")

1. The Specification discloses "[i]t is known in the art to detect certain constituents in a sample, such as a chemical or biological cloud in the air, by spectral analysis of the molecules in the sample." [Spec 003].

2. The Specification discloses "[i]t has been suggested in the art that certain chemical and biological materials exhibit more unique spectral features from emissions in the terahertz frequency band. Thus, the materials may be easier to identify from emissions at this frequency band. However, most of the currently known spectroscopy methods that detect signals in these lower frequencies are based on absorption or transmission techniques. These techniques typically lack sufficient sensitivity to detect and analyze trace amounts of chemical and biological materials." [Spec 007].

3. Luukanen discloses the system of the invention can make use of detectors for submillimeter-range spectroscopy to detect submillimeter radiation. Specifically, Luukanen states

> The system of the invention can be used not only for searching weapons and smuggled goods but also for submillimeter-range spectroscopy. . . The capability of such guiding equipment can be improved by using a submillimeter-wavelength range, since the air permeance in a submillimeter range is reasonable and the detection occurring in a submillimeter wavelength range is less sensitive for countermeasures, such as smoke and torches, as the submillimeter radiation penetrates rain, fog and smoke more effectively than infrared radiation. The operation of such an image head can be further improved by using a detector matrix, provided with detectors for more than one wavelength range, for example detectors for a far infrared range and a submillimeter wavelength range. The system of the invention can also be used for the passive and active detection of mines and mine resembling objects. Even in this type of application, the system can preferably make use of detectors for at least two wavelength ranges, such as for example detectors for an 8 to 12 µm far infrared range and a submillimeter wavelength range.
> (col. 12, l. 43- col. 13, l. 6).

4. Appellants contend that the Examiner has not established a prima facie case of obviousness because the references do not teach or suggest providing a cold surface in the background of a sample and in the field of-view of a spectrometer to reduce the emissions spectrum of the background to better receive the emissions spectrum from the sample. Appellants contend that "[t]he Luukanen cold surface is not used to reduce the background emissions to separate the sample emissions, as in Appellant's claimed invention." (App. Br. 16).

5. Appellants acknowledge that the cold body of Luukanen is utilized for enhancing the contrast between the object being analyzed and its background. (App. Br. 10-11.)

6. Appellants have identified Luukanen as utilizing imaging technology. (App. Br. 10). However, Appellants have not provided a technical explanation why the disclosed submillimeter-range spectroscopy of Luukanen would have been unsuitable for emissions detection from a sample. Appellants have not asserted spectroscopy methods of Luukanen that detect signals in the submillimeter-range are based on absorption or transmission techniques.

PRINCIPLES OF LAW

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)). Therefore, we look to Appellants' Brief to show error in the proffered prima facie case. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2007).

A claimed invention is unpatentable if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103. "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398,

416 (2007). The question to be asked is "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at 417.

ANALYSIS

Appellants have not shown reversible error in the Examiner's proposed combinations of Luukanen with any of Laufer or Chou or Butler. Appellants have not asserted that the teachings of Luukanen, Laufer, Chou, and Butler are not combinable as suggested by the Examiner. Appellants have not provided a technical reason why the system of Luukanen utilizing submillimeter-range spectroscopy would have been unsuitable for

Appellants generally contend that the dependent claims 2-19, 21-25, 27-31, 33-37, 39-44, 46-51, 53-57, and 59-65 are not made obvious in view of the teachings of Luukanen, Laufer, Chou, Butler and/or Arnone. (App.Br. 16). Appellants' contention is not persuasive because it does not identify an error in the Examiner's findings regarding the cited prior art and the determination that it would have been obvious to a person of ordinary skill in the art to combine the components as suggested by the Examiner.

Accordingly, we affirm the rejections of claims 1-3, 5, 12-25, 45-51, and 58-65 under 35 U.S.C. § 103(a) over the combined teachings of Luukanen and Laufer or Chou or Butler; and claims 4, 6-11, 26-44, and 52-57 under 35 U.S.C. § 103(a) over the combined teachings of Luukanen and Laufer or Chou further in view of Arnone.

CONCLUSION

The decision of the Examiner rejecting claims 1-65 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED

PL Initial:
sld

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